

**PENNSYLVANIA GAME COMMISSION
BUREAU OF WILDLIFE MANAGEMENT
PROJECT ANNUAL JOB REPORT**

PROJECT CODE NO.: 06210

TITLE: White-tailed Deer Research/Management

JOB CODE NO.: 21014

TITLE: Effect of bait on deer harvests in Special Regulation Areas of Pennsylvania

PERIOD COVERED: 1 July 2008 through 30 June 2009

COOPERATING AGENCIES: None

WORK LOCATION(S): Private Lands in the Southeast Special Regulation Areas

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ABSTRACT In 2006, the Pennsylvania Game Commission approved the use of bait when deer hunting in southeastern Pennsylvania. Use of bait is limited to the special regulation areas of Bucks, Chester, Delaware, Montgomery, and Philadelphia counties. In order to evaluate effectiveness of baiting on hunter success and deer harvest before the 2010 sunset provision on the regulation, hunter surveys and field studies were being conducted. Hunter surveys were conducted in the spring of 2009. Five-hundred four surveys were mailed to hunters in the special regulation areas with a response rate of 63%. The majority of survey respondents (85%) hunted deer in Wildlife Management Units 5C and 5D during the 2008-09 hunting seasons. Most hunters (77%) knew baiting was legal in the special regulation counties. Sixty-six percent of hunters who hunted in WMUs 5C and 5D hunted in the special regulation counties. During the 2008-09 hunting seasons, Eccologix Biodiversity Consulting Group managed a controlled deer hunt in Bucks County. Using data collected by Eccologix hunters, hunting success with and without the aid of bait was compared.

OBJECTIVES

1. Estimate and describe use of bait by hunters and its effect on harvest success in Special Regulations Areas.
2. Monitor hunter attitudes and opinions towards use of bait
3. Evaluate use of automatic feeders as bait distributors.
4. Evaluate effect of automatic feeders on hunter harvest.

METHODS

Hunter Survey

We used a hunter survey to estimate and describe use of bait by Pennsylvania hunters, estimate effect of bait on hunter success, and to monitor hunter attitudes and opinions towards use of bait (Appendix 1). This survey will be repeated through the 2009-2010 hunting seasons. We selected survey participants from respondents of the 2007 Game Take Survey, who indicated they hunted deer in Wildlife Management Units (WMUs) 5C and 5D. WMUs 5C and 5D contain the 5 special regulation counties. We conducted this survey using standard mail survey protocols (Dillman 1978) including an initial mailing followed by a postcard reminder. We did not conduct a second mailing because the response rate after the first mailing and reminder exceeded 60%.

Field Evaluation

During the 2008-09 hunting seasons, Eccologix Biodiversity Consulting Group managed a controlled deer hunt for Upper Makefield Township, Bucks County. Hunters were screened by Eccologix and required to collect hunt data to participate in the program. Eccologix has shared these data with the Pennsylvania Game Commission (PGC) so we may evaluate the use of bait under field conditions by hunters. No controls or specified study design was used and bait use depicts how “regular” hunting activity would be conducted under the current baiting regulation. Data collected by hunters included date of hunt, hours hunted, whether or not hunter was using bait, use of automatic feeder, type of deer observed, and number of deer harvested.

RESULTS

Hunter Survey

We sent surveys to a total of 504 individual hunters. The mailings resulted in 12 non-deliverable surveys (i.e., moved with no forwarding address, death, etc.) and 311 usable responses, for a response rate of 63%. Results are presented as a single number (e.g., 55%). These estimates have an associated 95% confidence interval of approximately $\pm 4\%$. For example, if 55% of the respondents agreed with a statement and, the survey were repeated numerous times, the interval from 51% (55-4) to 59% (55+4) would include the actual percent of hunters who agreed with the statement 95% of the time.

The majority of survey respondents (85%) hunted deer in WMUs 5C and 5D during the 2008-09 hunting seasons. Most hunters (77%) knew baiting was legal in the special regulation counties. Sixty-six percent of hunters who hunted in WMUs 5C and 5D hunted in the special regulation counties.

Results from annual surveys will be reported in the final report at the conclusion of this study in 2010.

Field Evaluation

Eccologix collected data from over 60 hunters resulting in over 5,900 hunt-hours during the 2008-09 hunting seasons. Four hundred forty-six deer were harvested by this effort. Three hundred nine were harvested using some type of bait. Thirty percent more time was needed to harvest a deer

without the use of bait (15.76 hours/harvest vs 12.12 hours/harvest). Prebaiting a site reduced harvest time by 51% (10.86 hours/harvest vs 21.15 hours/harvest). There was minimal difference between baiting with or without an automatic feeder (11.74 hours/harvest vs 10.44 hours/harvest, respectively). Using an automatic feeder requires consistent regular maintenance (i.e. changing batteries, setting timers, monitoring feed levels). Without this type of commitment, the full benefits of using an automatic feeder are not realized (Kilpatrick, *personal comm.*).

RECOMMENDATIONS

1. Continue hunter survey annually to track changes in hunter attitude and success through 2010.
2. Complete final report in 2010

LITERATURE CITED

Dillman, D. A. 1978. Mail and telephone surveys: the total design method. John Wiley & Sons, New York, New York, USA.

APPENDIX 1. Survey mailed to hunters in the Special Regulation Areas

2009 Deer Hunter Survey: Hunting with Bait

The purpose of this survey is to assess hunter success and use of bait during the 2008-09 deer-hunting seasons. Your response is very important. Please respond even if you did not hunt in 2008-09. Thank you in advance for your prompt response.

- 1) Did you hunt deer in Wildlife Management Units (WMUs) 5C or 5D during the 2008-09 hunting seasons? **(Circle one number)**
 1. YES
 2. NO

- 2) Prior to this survey, did you know that deer hunting over bait was legal in the 5-county area including Bucks, Chester, Delaware, Montgomery, and Philadelphia counties? **(Circle one number)**
 1. YES
 2. NO

- 3) Did you hunt deer in any of the following 5 counties – Bucks, Chester, Delaware, Montgomery, or Philadelphia counties – during the 2008-09 hunting seasons? **(Circle one number)**
 1. YES
 2. NO If NO, go to **QUESTION 26**

- 4) How many different properties did you hunt in the 5-county area where baiting was legal? _____ **(# of individual properties hunted)**

- 5) Did you use bait during the 2008-09 deer hunting seasons? **(Circle one number)**
 1. YES If YES, go to **QUESTION 7**
 2. NO If NO, go to **QUESTION 6**

- 6) Why did you not use bait? **(Circle all that apply)**
 1. DID NOT KNOW BAITING WAS LEGAL
 2. BAITING REGULATION WAS TOO COMPLICATED
 3. BAIT OR FEEDERS WERE TOO EXPENSIVE
 4. BAITING NOT NEEDED FOR ME TO HARVEST DEER
 5. BAITING TOO TIME CONSUMING
 6. LANDOWNER DID NOT APPROVE USE OF BAIT
 7. BAITING IS NOT ETHICAL
 8. OTHER: _____
When finished with QUESTION 6, go to QUESTION 26

- 7) Why did you use bait to hunt deer? **(Circle all that apply)**
 1. TO SEE MORE DEER
 2. TO DRAW DEER FROM NEIGHBORING POSTED OR UNHUNTABLE AREAS
 3. TO SEE DEER DURING SHOOTING HOURS
 4. TO IMPROVE SHOOTING SAFETY
 5. OTHER: _____

- 8) Did you consult with landowners prior to using bait to hunt deer? **(Circle one number)**

1. YES If YES, how many landowners did you ask to use bait? _____ (# of landowners)
2. NO

9) Did any landowners deny use of bait to hunt deer? (**Circle one number**)

1. YES If YES, how many landowners denied use of bait? _____ (# of landowners)
2. NO

Please complete the following table with the number of DAYS HUNTED and DEER HARVESTED when hunting in baited and unbaited areas in Bucks, Chester, Delaware, Montgomery, and Philadelphia counties.

Season	BAITED AREA		UNBAITED AREA	
	DAYS	DEER HARVESTED	DAYS	DEER HARVESTED
10) EARLY ARCHERY (Sept 20 to Oct 3)				
11) REGULAR ARCHERY (Oct 4 to Nov 15)				
12) OCT MUZZLELOADER (Oct 18-25)				
13) REGULAR FIREARMS (Dec 1-13)				
14) EXTENDED FIREARMS (Dec 15 to Jan 24)				
15) LATE ARCHERY/FLINTLOCK (After Dec 25)				

16) Did you use an automatic feeder? (**Circle one number**)

1. YES If YES, at what time(s) was it set to release bait? _____
2. NO

17) What kind of bait did you use? (**Circle all that apply**)

1. CORN
2. APPLES
3. SALT OR MINERAL LICKS
4. COMMERCIAL DEER FOOD/PELLETS
5. OTHER:

18) On average, how long did you pre-bait a site before hunting at the site? _____ (# of days)

19) In what months did you use bait to hunt deer? (**Circle all that apply**)

1. SEPTEMBER
2. OCTOBER
3. NOVEMBER
4. DECEMBER
5. JANUARY

20) In what months did you consider baiting most successful? (**Circle all that apply**)

1. SEPTEMBER
2. OCTOBER

3. NOVEMBER
4. DECEMBER
5. JANUARY

21) Do you think baiting increased your chances of harvesting a deer? (**Circle one number**)

1. YES If YES, go to **QUESTION 23**
2. NO If NO, go to **QUESTION 22**

22) If you think hunting deer over bait was less successful than expected, what reasons caused it to be less successful? (**Circle all that apply**)

1. TYPE OF BAIT USED
 2. HUMAN DISTURBANCE
 3. DEER BEDDING TOO CLOSE TO BAIT
 4. DEER USING BAIT BEFORE OR AFTER SHOOTING HOURS
 5. OTHER:
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23) Will you use bait during the 2009-10 deer hunting seasons? (**Circle one number**)

1. YES If YES, continue to **QUESTION 24**
2. NO If NO, continue to **QUESTION 25**

24) Do you expect to maintain more, fewer, or the same number of bait sites next year? (**Circle one number**)

1. MORE
2. FEWER
3. SAME

25) Based on your experience using bait to hunt deer during the 2008-09 hunting seasons, what changes would you recommend to increase deer hunting success when using bait?

26) If all processing costs were covered for donating a harvested deer, how many would you be willing to harvest during the regular hunting seasons? (**Circle one number**)

1. 1 DEER
2. 2-3 DEER
3. 4-5 DEER
4. MORE THAN 5 DEER